Неравенства и социална (дез)интеграция: в търсене на заедност

Юбилеен сборник
в чест на професор Румяна Стоилова

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Inequalities and Social (Dis)Integration: In Search of Togetherness

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Gender segregation in education and employment. The role of educational systems in Bulgaria and Switzerland[1]

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Introduction

Both in the Swiss and in the Bulgarian labour market, women and men tend to work in different occupations (Imdorf et al. 2014; Bieri et al. 2016). Due to unequal labour market opportunities and returns (career opportunities, remuneration) this horizontal gender segregation results in unequally distributed labour at the work place (Blossfeld et al. 2015) and in the family (Levy et al. 2002), whereupon women often lose out and get under constraint to carry out the unpaid domestic labour and care work in the family. Because horizontal gender segregation results in unequal life chances for women and men, it is important to understand its underlying mechanisms.

Too often, education has been overlooked as a trigger of gender segregation in the labour market (Imdorf et al. 2014). Likewise, school-to-work transition research has been gender blind (Smyth 2005). One important insight of previous research is the fact that vocational education considerably contributes to the gender segregation in a country's education system (Reisel et al. 2015). This has been illustrated for Switzerland and Bulgaria amongst other countries such as Germany, Norway and Canada (Ilieva-Trichkova et al. 2015; Imdorf et al. 2014; Imdorf et al. 2015). As far as Bulgaria is concerned, Bieri et al. (2016) have analysed how vocational education impacts gender segregation in the labour market. They found that men with vocational education are more likely to work in male-typed occupations, whereas higher education steers men toward gender mixed

[1] The research presented in this article was funded by the Swiss National Science Foundation within the research project Educational Systems and Gendered Transitions from School into Vocational Training and Work (SNSF Grants No. 133731 and No. 159281).

and a-typical occupations. However, neither vocational nor higher education had a significant effect for gender-typed job careers of women.

For Switzerland, a country which is famous for its initial vocational education and training (IVET) system, it has been argued that the education system forces students to make major career choices early on. The wide variety of differentiated vocational education and training programmes on offer allows youths to make gender-typical career choices. Because of the occupational linkage of education and employment, these choices translate into different jobs for women and men later on (Buchmann and Charles 1995).

In spite of this important insight, we still lack sufficient research on the education system's role in creating a gender-segregated labour market. The research programme Educational Systems and Gendered School-to-work Transitions at the Universities of Basel (2011–2015) and Bern (2015–2017) has addressed this research gap and aimed at understanding how educational institutions matter for gender segregation in education and at work. Based on a sociologically informed understanding of educational systems that incorporates gender as an analytical category, the project represents an innovative contribution to international transition research. Methodically, it relies on internationally comparative case studies.

The article presents the findings from two comparative studies of the above-mentioned research programme on the respective institutional structures in education and the labour market and their effects on gender segregation in Bulgaria and Switzerland. On the one hand, we analysed how gender-typed educational pathways are influenced by the institutional permeability between vocational education at the secondary level and the university. As already mentioned, Switzerland and Bulgaria exhibit marked horizontal gender segregation in their secondary vocational educational programmes. Compared with Switzerland, the Bulgarian education system, however, offers greater permeability from vocational education to the university. We investigated to what extent this form of permeability enables a de-gendering of individual educational careers. On the other hand, we investigated more closely the role of vocational education in the transmission of gender segregation from education into the labour market. In contrast to Switzerland, the Bulgarian education system is less strongly occupationally structured and the linkage between education and employment is likely less pronounced. Thus, the question arises whether gender segregation in education (which, compared with Bulgaria, is more pronounced in Switzerland) transfers into the labour market given the strong coupling of education and employment in Switzerland. Both research questions were analysed with Swiss TREE data and a recent Bulgarian school leaver survey.

In the subsequent sections, we will present summary findings of our investigation on the extent of educational permeability in the two countries and the effects of this permeability on gender segregation in higher education, as well as our results on the role of vocational education in the transmission of gender segregation from education into the labour market. First, we present an overview of the educational and labour market structures and gender segregation in Bulgaria and Switzerland.

Education, work and gender segregation in Bulgaria and Switzerland

The following figure illustrates enrolment rates in upper secondary and tertiary education and the respective female shares in Bulgaria and Switzerland.

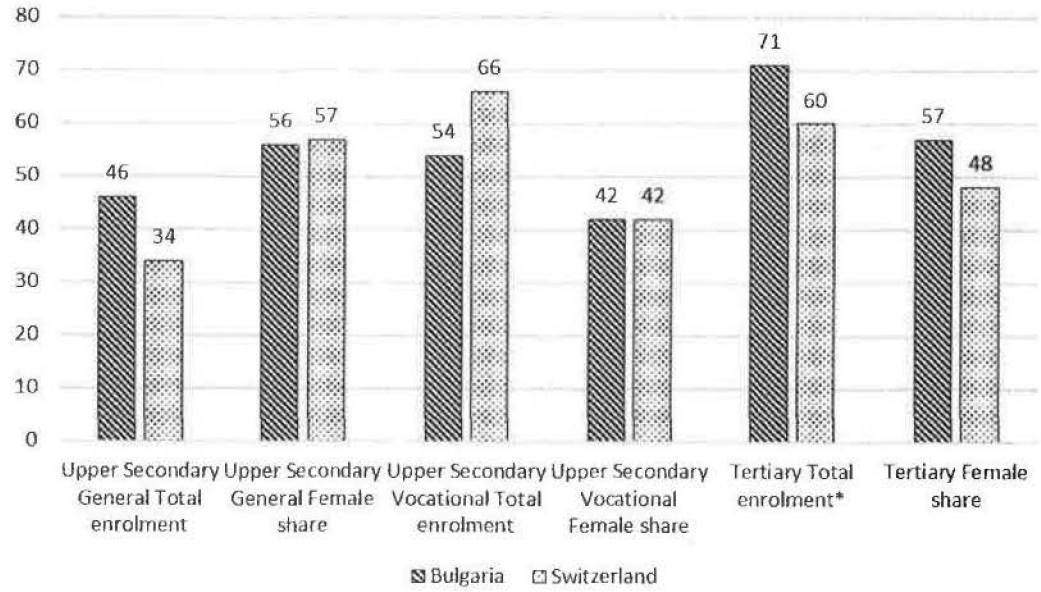

Figure 1. *Enrolment rates in upper secondary and tertiary education by country*

Notes: Data sources: Eurostat (2016) for 2014; for *UNESCO (n.d.) for 2014. Tertiary Education refers to ISCED 5 to 8 categories.

Forty six percent of Bulgarian upper secondary pupils are in general programmes and 54 percent enrol in vocational schools. In Switzerland there are fewer pupils in general upper secondary programmes (34 percent) and more enrol in vocational tracks (66 percent). We observe that the female share in gen-

eral upper secondary schools in both countries is larger (with 56 and 57 percent) than the female share in the vocational programmes (42 percent). Turning our attention to tertiary education, the total enrolment stands at 71 percent in Bulgaria. In Switzerland, this percentage is quite lower, with 57 percent higher education enrolment. The share of women enrolled in tertiary education is larger in Bulgaria – with 60 percent women – compared with Switzerland, where that percentage stands at 48 percent.

Compared with other countries, Bulgaria has relatively low gender inequality levels (Eurostat 2013; World Economic Forum 2013; Hausmann et al. 2010) and horizontal gender segregation has remained moderate in the labour market and in education (Bieri et al. 2016). Switzerland, on the other hand, has relatively high levels of horizontal gender segregation both in education and in the labour market (Buchmann and Charles 1995; Leemann and Keck 2005; Imdorf et al. 2014). The following figures illustrate this. The share of female graduates in higher education engineering, manufacturing and construction fields is 33 percent in Bulgaria and 15 percent in Switzerland, with a 27 percent EU average in 2014 (Eurostat 2016). Similarly, female graduates in science, math and computing made up 42 percent in the EU, 50 percent in Bulgaria and 32 percent in Switzerland in 2014 (Eurostat 2016).

Evidence from the labour market also illustrates important differences with regard to horizontal gender segregation between the two countries. Switzerland has achieved a middle position of occupational gender segregation amongst advanced industrial countries since the 1980s, when it still had one of the highest levels of horizontal gender segregation (Charles 2004). In Bulgaria on the other hand, the gender segregation rates were historically relatively low[2] even though they have increased in the last decade (Bieri et al. 2016; EGGE 2009).

Mechanisms through which the educational system generates gender segregation

The research literature presents different explanations for occupational gender segregation. Prevalent are studies grounded in socialization theory, which assume that gender segregation is a result of gender stereotypical role models that become internalized in the process of socialization. In contrast, economic perspectives – such as human capital theories – conceptualize men and women

[2] This can be partly attributed to the fact that women are often found in male typical professions in the IT sector. The share of women in these professions is the highest in Europe, with 28.5 percent (EGGE 2009).

as rational actors who choose what they consider the best profession based on a cost benefit analysis. Here gender segregation arises through gender-typical preferences and restrictions that affect the cost benefit analysis. Finally, there are institutional explanations according to which gender segregation is shaped by institutional contexts of education and work. Imdorf et al. (2014) investigate how educational structures affect gender segregation in education and work in Switzerland. Their research shows that cantons with prominent IVET offerings generate more gender-typed school-to-work transitions compared with cantons where Gymnasium enrollment is more common (Imdorf et al. 2014). Four mechanisms are identified through which the educational system promotes gender segregation: *occupational specificity, institutional timing of career choice, permeability within education,* and *institutional linkage* between school and the labour market (ibid.).

Occupational specificity provides an opportunity structure for gender stereotyped decision-making. Educational offerings that prepare students for particular jobs tend to be more gender segregated because occupations are often gender-typed. Educational programmes that are structured according to those occupations provide students with the opportunity to follow and realize stereotypical gender norms. Switzerland for instance, has a high degree of occupational specificity and the IVET offerings at the upper secondary level are structured accordingly providing VET certificates for particular occupations. Geographical areas where IVET programmes predominate have higher levels of gender segregation compared with regions where more students attend general academic programmes (Gymnasiums) (Imdorf et al. 2014).

The *institutional timing of career choice* has also been found to be relevant because different logics guide career choices in different biographical stages. Adolescents are particularly receptive to gender stereotypes and are less likely to opt for career choices that go against established gender norms. Therefore, educational programmes where students need to pick a career in IVET programmes at the upper secondary level (i.e., when students are 14–18 years old) promote gender-typed school and career trajectories. While adolescents are guided by short term gender identity, students who are older are guided more strongly by long-term life plans. As a result, educational decisions made later on tend to be less gender-typed.

In systems with greater *educational permeability,* students have the opportunity to quit gender-typed pathways and to make a second, less gendered, career choice. When there is little opportunity for educational re-orientation, then the gendered career paths chosen during adolescence are more likely to persist, hence leading to more gendered educational (and eventually labour market) outcomes (Imdorf et al. 2014). On the other hand, when students are able to switch

between different educational programmes, this allows them to escape gender-typed career trajectories. Evidence from Norway shows a de-gendering effect of permeability, particularly for men (Imdorf et al. 2015).

Lastly, when *interlinkages* between educational programmes and employment are strong, gender segregation more easily transfers from education to employment. In systems like that of Switzerland, where educational offers are closely tied to jobs, gender-typed decisions made by students in school are then carried over into the labour market (Buchmann and Charles 1995; Imdorf et al. 2014). In countries where this linkage is weaker, graduates have the opportunity to adjust their educational choices, and some may thereby opt for less gendered careers.

Empirical data

In this paper, we focus on our results investigating two of those institutional dimensions: permeability between vocational and higher education on the one hand, and the interlinkage of education and employment on the other hand. In order to analyse the impact of educational permeability on gender segregation in education as well as the role of vocational education in the transmission of gender segregation from education into the labour market, data on educational trajectories and school-to-work transitions are required. The Swiss panel study *Transitions from Education to Employment* (TREE) and the *Bulgarian School Leavers Survey* (BSLS 2014) both offer such data.[3]

TREE is a nationally representative longitudinal survey which tracks students in Switzerland who left compulsory education (9th grade) in 2000 with a sample of 6,346 students. There were yearly follow-up surveys until 2007 and an additional two follow-ups in 2010 and 2014. Interviews were conducted using CATI. The TREE survey includes questions on educational experiences, employment histories and social background. The analysed sample of the prospective longitudinal study amounts to 4,192 individuals.

The BSLS was conducted in 2014, when 2,100 individuals were surveyed. It is based on a nationally representative sample of individuals aged 15–35, who left formal education no less than one and no more than five years preceding the survey. The BSLS collected retroactive information on educational, school-to-work transitions, labour market experiences and social background variables via face-

[3] Scientific use files from both surveys, the Swiss TREE panel study (cohort 1) and the Bulgarian School Leaver Survey 2014, are available free of charge through the Swiss Centre of Expertise in the Social Sciences (https://forsbase.unil.ch, study references 11942 and 12476).

to-face interviews. We used a subsample of 1666 cases that provide the required information on educational trajectories and school-to-work transitions. We also used macro data from the Swiss Federal Statistical Office and from the Bulgarian National Statistical Institute in Bulgaria in order to determine the gender-type of educational programmes and occupational groups.

Educational permeability and gender segregation in education[4]

When investigating educational horizontal gender segregation, it is important to explore the permeability between secondary educational organization structures and higher education. Transition from secondary to tertiary education provides the opportunity for a second choice and a career reorientation. Thereby, permeability in educational systems may reduce horizontal gender segregation in education. As we will explore further below, IVET programmes of initial vocational education and training are substantially gender segregated in Bulgaria and in Switzerland. At the same time, universities in both countries are less gender-typed. Thus, a transition from IVET to university level education would provide opportunities for de-gendering educational pathways in both countries. That is, if such transitions are available to students. Here is where we note important national differences. Bulgaria offers greater permeability between diverse upper secondary educational programmes and higher education. Many IVET graduates can access university programmes in Bulgaria, while in Switzerland this permeability is institutionally more limited. Thus in Switzerland pupils from gendered IVET programmes have less chances to de-gender their educational decisions because they have only limited access to university programmes, while IVET graduates are channelled into the Universities of Applied Sciences (Buchmann et al. 2016). Our empirical study sought to provide information on a) the extent of gender segregation in the respective educational programmes, b) the extent of permeability in the two respective countries, and c) whether these transitions in fact de-gender educational choices.

Figure 2 illustrates the relative shares of men and women enrolled in vocational upper secondary educational programmes, higher education, the percentage of vocational upper secondary students who make the transition into higher education, and the gender-type of the respective educational programmes, using data from our two datasets, TREE and BSLS 2014.

[4] This section summarizes the findings of Imdorf et al. (under review).

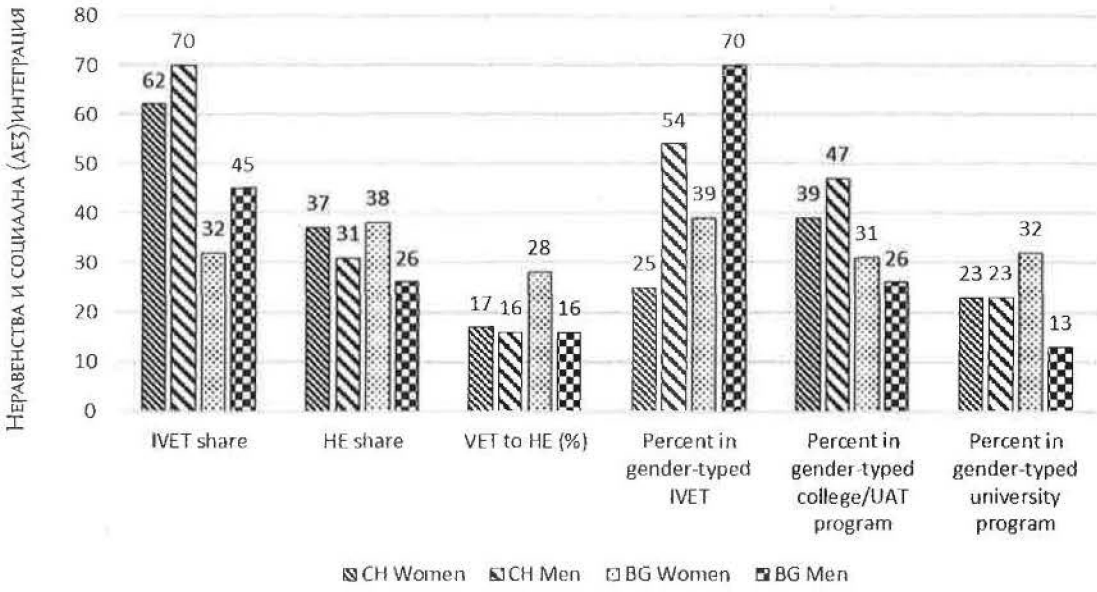

Figure 2. *Enrolment and gender-type by education, gender and country*
Source: TREE and BSIS 2014

As illustrated in Figure 2, 32 percent of women are enrolled in IVET in Bulgaria while 45 percent of Bulgarian men attend vocational programmes at the upper secondary level. We can see that IVET enrolment is higher in Switzerland, and there too, men are more likely than women to attend IVET: 70 percent of men and 62 percent of women attend IVET. Looking at higher education, the numbers are reversed in that women are more likely to attend higher education compared with men in both countries. Higher education enrolment of women is 38 percent for Bulgarian women and 37 percent for Swiss women. The percentage of men attending higher education is 26 percent in Bulgaria and 31 percent in Switzerland.

Indicative of permeability are the figures on what percent of IVET graduates obtain a higher education degree. We can see that while the percentages are the same for men (16 percent), there are important country differences for women: while 28 percent of women in IVET go on to earn a higher education degree in Bulgaria that percent is 17 percent in Switzerland. This suggests that particularly Bulgarian women take advantage of the permeable educational structures in Bulgaria. Moreover, what is not visible in this figure are qualitative differences in those transitions, namely whether the transitions lead men and women into less gendered university programmes or whether IVET graduates are channelled into more gendered colleges or Universities of Applied Sciences (UAS). Further insights on this distinction are provided below.

We now turn our attention to horizontal gender segregation. We observe that men are most likely to find themselves in a male-typed IVET programme.

Seventy percent of male IVET pupils are enrolled in a male typed programme (the remaining 30 percent of male IVET are found in mixed or female-typed programmes), while 39 percent of IVET women are in a female-typed school in Bulgaria. In Switzerland, we see similar gender dynamics, but with an overall lower level of horizontal gender segregation in IVET programmes. Fifty-four percent of men in IVET are enrolled in a male-typed programme and 25 percent of women in IVET are in a female-typed one.

The shares of students in gender-typed university programmes are considerably lower compared with IVET, especially for men. In Bulgaria, only 13 percent of male university students are in a male-typed programme while in Switzerland that percent stands at 23 percent. Bulgarian women are more likely to find themselves in a female-typed programme (32 percent), and for Swiss university women that percentage is 23 percent. In Bulgaria, 31 percent of women enrolled in colleges are in a female-typed programme and 26 percent of men are in a male-typed programme. Those percentages are quite a bit higher in Switzerland. Forty-seven percent of men in the Universities of Applied Sciences are in a male-typed programme and 39 percent of women are in a female-typed field. These differences between college/UAS and university levels show how important it is to analyse those higher education sectors separately.

These figures suggest that, especially for men, a transition from IVET to university could lead to de-gendering. Since Universities of Applied Sciences are also substantially gendered – especially for women – a transition from IVET to those schools will likely not have a de-gendering effect in Switzerland, while in Bulgaria the same transition could help especially men to de-gender their educational experience.

Research is very sparse on whether, and to what extent, educational permeability tends to de-gender educational careers. Therefore, we statistically tested whether the transitions from (gender-typed) IVET to higher education allow Bulgarian and Swiss men and women to de-gender their original educational choices. Our findings from a probit regression show that in Bulgaria, transitioning from IVET to higher education lowers the genderedness of education outcomes substantially for men: tertiary education lowers by 48 percentage points the probability that a male IVET graduate in Bulgaria has completed a gendered programme. For women, however, a transition from IVET to higher education in Bulgaria is not associated with a decline in genderedness. This mirrors similar findings from Norway, where higher education tends to reduce gender specificity more for men than for women (Imdorf et al. 2015). For Switzerland, we find that a transition to higher education is associated with an increase in genderedness, as we had expected, given the fact that IVET students are channelled into highly gender segregated Universities of Applied Sciences. However, this holds

true only for women, while for men the transition from IVET to higher education does not alter the gender-type of their educational career.

The role of IVET in the transmission of gender segregation from education to employment[5]

Our second study aims at analysing yet another dimension of the as yet little researched institutional arrangement of the education system as an explanatory factor of horizontal gender segregation in the labour market. We are especially interested in the interlinkage of education and employment, as well as in the role IVET plays in the transmission of gender segregation from education into the labour market.

As was already mentioned above, it has been shown that educational systems with a strong vocational orientation tend to have higher horizontal gender segregation compared with general education systems (Reisel et al. 2015). Similarly, the linkage of education and employment is particularly strong in countries with a developed vocational education (Shavit & Müller 1998). Accordingly, we assume that gender segregation is not only particularly high in countries with predominant vocational education, but also that this gender segregation is more likely to transfer into the labour market due to the strong coupling of education and employment in those countries.

To test our assumptions, we compared individual transitions from education to employment in Switzerland and Bulgaria. On the one hand, the two countries are different in their levels of horizontal gender segregation on the labour market. As discussed earlier, Switzerland exhibits relatively high segregation values in employment, while in Bulgaria the segregation can be assumed to be comparatively low. On the other hand, the post-obligatory Swiss education system is strongly oriented towards vocational education. Training is frequently focused on specific occupational skills that are in demand on the labour market. This points to a strong linkage between education and employment and also implies relatively high gender segregation in the vocational educational programmes. While vocational education is also important in Bulgaria, the number of people who complete such vocational programmes is lower compared with Switzerland (cf. above). Furthermore, to a large extent, general knowledge is taught as a relevant occupational skill in the Bulgarian vocational education (Ilieva-Trichkova et al. 2015), i.e., the Bulgarian vocational education is less strongly geared towards the labour market than in Switzerland.

[5] This section refers to findings presented in more detail by Heiniger and Imdorf (under review).

Based on this background, we tested the following three hypotheses:

Gender segregation in education is greater in Switzerland than in Bulgaria (H1); The linkage between education and employment is stronger in Switzerland than in Bulgaria (H2); The gender segregation in education is transferred into the labour market to a greater extent in Switzerland, due to this country's pronounced linkages between education and employment, in comparison with Bulgaria (H3).

To test these hypotheses, information about educational programmes (level and specialty), first significant job, as well as on the gender-type of education and employment, were required. Educational programmes were coded in accordance with the internationally comparative ISCED classification. In addition, as in the first study, we distinguish between three educational types: IVET, universities and colleges/Universities of Applied Sciences (UAS). In terms of labour market entry, we coded for each person the first significant job, based on ISCO, which is comparable for Bulgaria and Switzerland. The gender-type of education and the first significant jobs were determined based on the female share of the respective educational programme or job, according to official national educational and labour market data for Bulgaria and Switzerland.

To test the first hypothesis, we calculated dissimilarity indices as measures for occupational gender segregation per educational type and country. To investigate the second hypothesis, we followed DiPrete et al. (2017) and used a measure for the linkage between education and employment (the so-called Mutual Information Index). The third hypothesis was tested by means of separate OLS regressions for the two countries, taking the gender-type of the first significant job as the dependent variable. Of particular interest was the effect of the interaction between the gender-type of the educational programme and the linkage strength between education and employment, upon the gender-type of the first significant job.

The three hypotheses were largely supported in our analyses. The dissimilarity indices shown in Table 1 corroborate the assumption of greater educational gender segregation in Switzerland compared with Bulgaria due to the greater relevance of vocational education in Switzerland (H1).

Table 1. *Gender segregation in education and labour market (Index of dissimilarity)*

	Education: total	IVET	University	UAS (CH), Colleges (BG)	Labour market (first sign. job)
Switzerland	0.56	0.59	0.42	0.58	0.58
Bulgaria	0.31	0.55	0.37	0.67	0.45

Source: Heiniger & Imdorf (under review)

The figures in Table 1 show that, in both countries, gender segregation is generally higher at the level of IVET and UAS/Colleges compared with the university level. The fact that the IVET share is higher in Switzerland than in Bulgaria (together with a higher share of school leavers with a less segregated gymnasium education in the latter country) results in a more pronounced educational gender segregation in Switzerland. We also found a higher degree of gender-segregated jobs at labour market entry in Switzerland compared with Bulgaria.

Furthermore, it was shown that, in Switzerland, the linkage between education and employment is particularly strong for people with IVET. In contrast, for people with a university degree, that connection turned out much smaller. In Bulgaria, we observe a reverse picture: people with university education exhibit a higher linkage strength compared with those with IVET, which points to a higher signal value of tertiary degrees for employers. On the whole, the second hypothesis (H2) can be said to be confirmed.

Lastly, the assumption was confirmed that gender segregation in education transmits especially strongly into the labour market when close interlinkages exist between education and employment (H3). With the exception of men in Bulgaria, the results confirm a significant positive interaction effect of gender-typical education and strong linkages on a gender-typical entry into the labour market. This effect is especially significant for men in Switzerland, for whom the gender segregation in education is particularly pronounced and the interlinkage of education and employment is especially strong.

With these results, we were able to support an institutional explanation for the strong genderedness of first jobs for men in Switzerland. For women, it is primarily the high genderedness of the UAS as well as the segregation of the university programmes that is transferred into the labour market due to the linkage dynamics. In Bulgaria, by contrast, the linkage between education and employment does not affect the transfer of the gender-type of men's education into the labour market. As such, the higher gender segregation in Bulgarian IVET does not transfer more strongly into the labour market in comparison with the relatively low segregation at the university. This could potentially help explain the lower – compared with Switzerland – occupational genderedness of men in the Bulgarian labour market. By and large, the explanatory power of our models is significantly lower for Bulgaria than for Switzerland. In forthcoming analyses, it is therefore important to determine other important factors that explain gender segregation in Bulgaria.

Conclusion

Comparing Bulgaria and Switzerland, we investigated how the institutional permeability between IVET and universities affects gender-typical educational trajectories and what the role of the vocational education is in the transmission of gender segregation from education into the labour market. On the one hand, the empirical results confirm that the institutional permeability of the Bulgarian education system helps to reduce the horizontal gender segregation in education. First, IVET graduates in Bulgaria are markedly more likely to complete university degrees than those in Switzerland, where the IVET graduates can access mostly tertiary programmes at Universities of Applied Sciences as well as training programmes in the framework of higher vocational education. Especially male IVET graduates succeed in substantially averting male-typical educational careers by their transition to universities in Bulgaria. In contrast, IVET graduates in Switzerland who transition into a University of Applied Sciences predominantly complete fields of study that are closely tied to the professional trainings completed at the secondary level. Thus, the gender-type of the educational career hardly changes for them.

On the other hand, the cross-national comparisons show that the horizontal gender segregation in education is more pronounced in Switzerland compared with Bulgaria. Also, the linkage between education (vocational or tertiary) and employment is stronger in Switzerland than in Bulgaria. As a result, the more pronounced gender segregation in education in Switzerland is more likely to transfer into the labour market due to the tighter linkages between education and employment in that country compared with a national context – Bulgaria – where this connection is much weaker.

In short: our investigations find a fundamentally lower horizontal gender segregation in education, and as regards labour market entry, in Bulgaria in comparison with Switzerland, which in turn is conditioned by the differences in their education systems and the varied strengths of the interlinkages between the respective educational systems and labour markets.

Both studies deliver empirically grounded knowledge on how the institutional dimensions of the education system – educational permeability and education-employment linkage – contribute to gender segregation in education and in the labour market. They complement and build on earlier findings that IVET generates high levels of horizontal gender segregation because of its high occupational specificity and its early institutional timing of career choice (Imdorf et al. 2014, 2015). The research programme Educational Systems and Gendered School-to-work Transitions thus provides decision-makers with the knowledge needed to reduce gender inequality in education and employment.

Switzerland, where the very limited permeability between vocational education and academic tertiary education helps perpetuate educational gender segregation, can learn from the Bulgarian case and increasingly develop institutional passages from IVET to universities, thereby providing IVET graduates with a second educational choice. Moreover, the possibility of a second shorter vocational education, which already exists in Switzerland, should be more widely publicized. For a second vocational education allows for a second choice – and thereby, ultimately, for a less gender-typical occupational choice. Bulgaria is advised to maintain the high permeability between IVET and universities so that young men and women who choose to complete strongly gender-typed vocational training may still have the option of revising their educational choice and hence working in less gender-segregated jobs later on.

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